

Detailed Summary of EPA PFAS Activities

What are you currently doing related to PFAS/PFOS/PFOA?

OCSPP

- EPA's New Chemicals Program
 - **Reviewed hundreds of pre-market alternatives for PFOA and related chemicals since 2000** before they enter the marketplace:
 - Identified whether the range of toxicity, fate and bioaccumulation issues that have caused past concerns with perfluorinated substances may be present.
 - Ensured that the new chemicals do not present an unreasonable risk to health or the environment.
- **Significant New Use Rule (SNUR)**
 - Proposed on January 21, 2015 to require manufacturers (including importers) and processors of PFOA and related chemicals, including as part of articles, to notify EPA at least 90 days before starting or resuming new uses of these chemicals in any products.
- **PFOA Stewardship Program**
 - **Eight companies participated in the program and successfully eliminated production of PFOA.**
 - Designed to phase out PFOA and related per- and polyfluoroalkylated substances (PFAS) including potential PFOA precursors by these companies by the end of 2015.

OLEM

- EPA Federal Facility Superfund Program
 - Program is actively engaged in a **PFAS cleanup process at 30 Federal Facility National Priority List (NPL) Sites.**
 - Number will grow since there are known or suspected contaminations of PFAS at 75 of 140 DOD Federal Facility NPL Sites.
 - PFAS detections in groundwater range from non-detect (based on analytical method limitations) or slightly exceeding the Drinking Water Health Advisory of 70 parts per trillion (ppt; PFOA and PFOS combined) to 2,000,000 ppt.
 - **Drinking water has been impacted at 13 of these Federal Facility NPL Sites.**
- Office of Superfund Remediation and Technology Innovation (OSRTI)
 - 12 known impacted NPL sites, including one proposed for listing (St. Gobain Hoosick Falls, NY)
 - 100s potential NPL sites (e.g. 100 metal plating sites, 300 landfills)
- Regional Assistance
 - Holding site specific consultations with Regions on investigations of PFAS contamination.

ORD

- EPA has been studying exposure and health effects of PFAS for more than 15 years.
 - Health Effects
 - **Compiling considerable knowledge on the toxicological effects of PFOA and PFOS, including studies on the fate of PFAS in the body, and**
 - **Conducting research to study the potential hazards of PFAS in the environment using computational toxicology modeling.**

Analytical Methods/Exposure Assessment

- Ongoing research on analytical methods, in collaboration with program and regional offices, for

measurement of PFAS in environmental media, and

- Evaluating sources, environmental fate and transport, and exposure to human and non-human receptors.

Risk assessment

- EPA's **Provisional Peer-Reviewed Toxicity Value (PPRTV) program completed a health assessment for perfluorobutane sulfonate (PFBS)**, a substance similar to PFOA and PFOS, in 2014.
- EPA identified **PFAS as a chemical class of interest to the Agency in the 2015 multi-year agenda for the Integrated Risk Information System (IRIS) program.**

Risk Management

- Characterize PFAS contamination in the soil, surface water, and groundwater at military installations where aqueous film forming foams (AFFF) have been used extensively
- With the Air Force Institute of Technology (AFIT), test in situ remediation technologies to remove PFAS at contaminated sites.

OW

- **Published Drinking Water Health Advisories (HA) in 2016 for PFOA and PFOS**
 - HAs are non-regulatory information for federal, state and local officials to consider when addressing drinking water contamination.
 - Identified 0.07 µg/L (70 parts per trillion) as the HA level for PFOA and PFOS combined and provided information about treatment and monitoring.
- Evaluating PFOA and PFOS for regulatory determination under the Safe Drinking Water Act (SDWA).
 - **PFOA and PFOS are on the fourth Contaminant Candidate List (CCL 4) published in November 2016.** OW is assessing PFOA and PFOS against the three SDWA regulatory determination criteria:
 - *may have an adverse effect on the health of persons;*
 - *is known to occur or there is a substantial likelihood that it will occur in public water systems with a frequency and at levels of public health concern;*
 - *In the sole judgment of the Administrator, regulating the contaminant presents a meaningful opportunity for health risk reductions for persons served by public water systems.*
 - OW is planning to brief the Administrator in 2018 to obtain option selection for a preliminary regulatory determination.
 - EPA must decide whether or not to regulate at least 5 CCL4 contaminants by January, 2021.
 - Preliminary regulatory determinations for public comment expected in 2019 (to enable final regulatory determinations by January 2021).

Regions

- **PFAS have been identified as an important issue in the Regions.** *Below are the general, ongoing efforts in the Regions. Please see the appendix for site-specific efforts.*
 - **Working collaboratively with states, local and federal partners, particularly DOD, to address concerns with PFAS contamination of public and private drinking water wells and legacy contamination at Superfund sites.**
 - **Providing support to states on different issues, including direct analytical support for sites, method improvement, method validation studies and quality assurance protocols.**
 - Assisting states, local agencies and federal facilities with public messaging regarding risks.
 - **Regions have had to issue Safe Drinking Water Act Administrative Orders to federal facilities (Pease AFB, NH and Warminster Navy Base, PA) in order to protect public supply wells** given the emergent nature of this class of chemicals and the slow reaction time of other federal

agencies.

- Experience in Region 3 has indicated that DoD will commit adequate funds to address ongoing contamination only after an enforcement action has been issued or threatened by EPA.
- In Region 8, DoD has been proactive, providing funding to Public Water Systems and homes with private wells to install treatment or reimburse other capital costs before the DoD site investigation determining the source of the PFAS contamination is completed.
- Regional laboratory representatives participate in national and regional programmatic meetings offering technical advice with expertise in analytical methodology and quality acceptability.

Cross-Agency Workgroups

- **ORD and OLEM lead a cross-EPA workgroup on characterizing human health hazards**
 - to characterize the available toxicity information for approximately 30 PFAS of interest to various program offices or regions;
 - to develop quantitative toxicity values for multiple PFAS, other than PFOA and PFOS; and
 - to inform evidence-based decisions by EPA offices and regions regarding potential human health risks from ongoing or future exposures.
- **OLEM/Region 3/ORD lead a cross-EPA workgroup on method development and validation**
 - to develop multi-laboratory validated methods for analyzing sample types other than drinking water (waters and solids) and quantifying 24 PFAS. Currently performing a multi-lab validation of a method for the 24 PFAS which was developed by the Region 5 Chicago Regional; and
 - to develop sampling protocols to address PFAS analytical data quality issues Regions have identified.
- **Region 10 and Region 3 lead a cross-EPA workgroup on evaluating data quality issues**
 - to develop guidelines for data deliverables and assessment criteria.

Other Federal and International Activities and Collaborations

- Agency for Toxic Substances and Disease Registry (ATSDR) – is developing a PFAS Toxicological Profile in 2017.
- Consumer Product Safety Commission (CPSC) – is considering a PFAS project in 2017 related to the potential use of PFAS in 3D printers.
- Food and Drug Administration (FDA) – is developing a PFAS risk assessment to address food packaging concerns.
- Centers for Disease Control (CDC) – has been monitoring human sera for PFAS in a sampling of the US population. Sampling protocols for human urine are being developed for exposure assessments that include more of the shorter chain PFAS that have more recently been introduced into commerce.
- PFAS Subgroup of the Chemical Toxicity Assessment Workgroup (Toxics & Risk Subcommittee) – formation in March 2017 (with exposure subgroup).
- Department of Defense (DOD)/Department of Energy (DOE)/ National Aeronautics and Space Administration (NASA) – coordinates and oversees response activities at National Priority List (NPL) sites – provide technical assistance and support on the PFOA/PFOAS Health Advisory (HA) when requested.
- National Institute of Standards and Technology (NIST) – continues to develop standard reference materials (e.g., water, soil, sediment) that contain certified concentrations of PFAS for quality control in environmental media.
- Other international coordination efforts – European Food Safety Authority (EFSA), Registration,

Evaluation, Authorisation and Restriction of Chemicals (REACH), Strategic Approach to International Chemicals Management (SAICM), Stockholm Convention on persistent organic pollutants, Organisation for Economic Co-operation and Development (OECD), United Nations Environment (UNEP).

What challenges are you facing? What do you need to be successful?

OCSPP

- **Concern about PFOA and related chemicals, which are still available in existing stocks, that are being newly introduced by companies not participating in the 2010/2015 PFOA Stewardship Program or are being imported.**
 - To be successful, EPA needs to consider the remaining risk from exposure to these chemicals and any additional actions needed to address the remaining risks.
- **Lack of toxicity and environmental data on the hundreds of submissions for new uses of chemicals as alternatives to PFOA/PFOS in various consumer products.**
 - EPA has authority under Toxic Substances Control Act (TSCA) to organize PFAS into categories and require testing. Doing so would give the Agency a better understanding of their safety, but would also be time and resource-intensive.

OLEM

- **Lack of toxicity data and validated analytical methods for media other than drinking water** limit OLEM's ability to effectively assess and manage site-specific risks and make it difficult to provide good risk communication to impacted communities.
 - Need scientifically-supported toxicity values for other PFAS to inform the potential health impacts to communities.
 - Need validated analytical methods for all media.
- **Sampling methodologies are complex due to potential cross-contamination from sampling equipment and consumer products.**
 - Need to assure data quality, given high potential for contamination.
- Determinations need to be made regarding whether State regulations are applicable or appropriate and relevant requirements (ARARs), which may impact clean-up levels.
- **PFAS are not currently classified as Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) "hazardous substances" or Resource Conservation and Recovery Act (RCRA) "hazardous waste or constituent."**
 - This raises challenges with regard to waste management, Federal property transfer, and cost recovery from potentially responsible parties.
 - Under RCRA, this makes it difficult to convince Potentially Responsible Parties (PRPs) to assess or address this contamination unless the state has specific regulations for them.
- **Extensive PFAS contamination at and around Federal Facility Superfund sites is complicating and delaying cleanup and property transfer.**
- **Federal PRPs at some federal facilities sites are reluctant to assess and/or address off site plumes without clear evidence they are the sole entity responsible for contamination.**

ORD

- **Very little is known about the toxicity of other PFAS** that have been used for a wide variety of consumer products and industrial applications, and have been detected in public water systems and at multiple contaminated sites.
 - Need to fill data gaps on PFAS toxicity.
 - In the available human studies, it is difficult to relate blood levels of PFAS to environmental exposure levels because of the lack of environmental monitoring and the persistence of longer-chain PFAS in the body.
- Need robust, validated analytical methods for PFAS chemicals for all media.

OW

- **Need toxicity data to perform health effects assessments for other PFAS** to inform the evaluation of other PFAS (particularly PFNA, PFHxS, PFHpA and PFBS) that have been detected in public water systems.

Regions

- **Analytical and Sampling Challenges**
 - **Need for robust, well tested, analytical methods for PFAS chemicals in surface water and soil.**
 - Current work is underway to reach this goal. Target date for EPA validated method for water is June 2017. A comprehensive multi-lab validation using other labs will be completed method by end of year.
 - One analytical challenge is the expensive instrumentation.
 - Challenges with impacts to vegetables, fruits, and livestock through irrigation water supply remain unanswered and would benefit from a nationally consistent approach.
 - **Since PFAS chemicals are now ubiquitous in the environment, special precautions are necessary to sample and analyze without contaminating the sample.**
 - Additional Quality Assurance steps may be necessary to monitor for potential contamination.
 - **There is insufficient federal, state and commercial laboratory capacity and capability across the nation.**
 - Additional testing methods to reliably and consistently achieve very low, part per trillion detection levels would be beneficial as states are developing their own standards that are lower than those used by EPA.
 - **Legacy sources (such as industrial sites, landfills, wastewater facilities, recyclers, etc.) and downstream deposition continue to be problematic for surface water contamination.** Much more study is needed to determine and delineate additional sources.
 - Even after studies are completed, states will continue to have extreme difficulty requiring cleanup or otherwise regulating these sources of unregulated contaminants, unless specific regulatory authority is given to complete such efforts.
- **Communication Challenges**
 - Need for better risk communication materials.
 - Clear risk communication given the lack of a Maximum Contaminant Levels (MCLs) for drinking water and differing approaches between the Safe Drinking Water Act and CERCLA in articulating risks.
 - **There is an unknown risk to small communities, including tribal communities, for which monitoring was not required under Unregulated Contaminant Monitoring Rule 3 (UCMR3).**
 - **Identifying potentially impacted small communities is challenging due to high numbers of potential sources and potentially contaminated sites.**
 - **It has been difficult for regional staff to explain the health advisory to citizens during public meetings.** While the advisory is primarily targeted to sensitive populations, it is difficult for non-sensitive populations to understand the risk implications of the advisory and why they are not included.
 - It has been particularly challenging to answer questions about short-term health impacts because the provisional health advisory was based on an exposure of weeks to months, but that value has been replaced by the final health advisory which is based on lifetime exposure. The general public still wants an answer about short-term health effects from higher levels.

- **Improved messaging for States, water systems, media and the public on the health risks** associated with emerging contaminants for which lifetime health advisories are established and a sensitive subpopulation exists for which more timely action is needed.
 - **Interpretation of potential health effects associated with individuals/populations drinking water at PFOA/PFOS levels above the Health Advisory of 70 ppt** and interpretation of individual blood testing results for PFOA and PFOS.
 - EPA and the states are experiencing significant challenges in how to communicate health risks to the populations affected by drinking water contamination.
 - Consumer Confidence Reports (CCRs) (where available) do not present UCMR3 monitoring results with enough context to offer the consumer a complete understanding of health risks.
- **Inconsistent positions among the states on safe drinking water levels.** For example, New Jersey has issued a preliminary “drinking-water guidance value” for PFOA at 40 ppt, lower than EPA’s current health advisory level of 70 ppt for PFOA and PFOS combined. Neighboring states, e.g. Vermont, have set or are considering lower numbers.
- **There are widespread citizen concerns about health and financial repercussions** such as mortgage unavailability, inability to sell, loss of home value when drinking water supplies are contaminated.
- **Need for PFAS toxicity data beyond PFOA/PFOS**
 - Regions are facing having to make interpretive drinking water/groundwater contamination determinations at sites where the presence of PFAS affecting drinking water wells have been documented.
 - **States are concerned that yet undetermined health effects of shorter chain PFAS might result in additional health advisories, perhaps requiring additional treatment** in systems that have already invested in a solution to the current PFAS concern.
- **Need for nationally consistent health-based values for PFAS**
 - There is confusion due to different health-based values being developed by states and other organizations has created uncertainty for state and the public.
 - **States and communities have significant challenges communicating risks** of PFAS particularly because of the lack of nationally consistent health-based values.
 - **Limited monitoring data for private wells under UCMR.**
 - **The Region would benefit from better defining our RCRA authority to address PFAS contamination.**
 - As PFAS are not regulated as RCRA hazardous waste or constituents, we have been relying primarily on facility cooperation to perform off-site investigations.
 - Lack of guidance on how to set action levels or cleanup goals for PFAs in soil, groundwater and surface water.
- **Resource constraints**
 - **Our states, as well as Regions, need more resources for sampling, investigation, analysis, and response.**
 - Local governments need funding for treatment systems to remove PFAS from drinking water.

What have our stakeholders (e.g., states) asked for? What are their needs?

OCSPP

- Companies participating in the 2010/2015 PFOA Stewardship Program are still expecting follow-up to the Stewardship Program so that other companies which did not participate in the Program also phase out manufacture (including import), processing, and use of long-chain PFAS.
- **As industry moves away from use of PFOA/PFOS chemicals and into different alternatives, the public, states and non-government organizations all want to know whether or not those alternatives are just as risky.**
 - Chemical manufacturers want certainty that their alternative is safe and won't later be restricted by EPA.
- To address both concerns, there is a need for better toxicity and environmental behavior information for PFOA/PFOS alternatives

OLEM

- **States need toxicity values for additional PFAS compounds**, and more validated analytical methods (described above).
- Exposed communities have asked for information on the health impacts of all the PFASs. Some communities have requested responses that ensure no exposure to PFAS (i.e., response below 70ppt) since they may have been exposed at high levels for many years.
- **Stakeholders have asked for transparency and open communication from responsible parties, including Federal responsible parties.**
- Stakeholders have been interested in the impacts of receiving property with PFAS contamination from the Federal Government since PFAS is not a 'hazardous substance' and certain provisions of CERCLA would not apply – e.g., warranty for Federal response.
- PFAS is considered a 'pollutant and contaminant' and not a 'hazardous substance' or RCRA hazardous waste (see above).
- **Remediation technology(ies) are needed.**

ORD

- There is a need for more information on the potential toxicity of PFAS compounds beyond PFOA/PFOS (e.g., novel and replacement chemicals).
 - including whether occurrence of multiple PFAS at a site pose a cumulative hazard issue.
- There is a need for validated analytical methods.
- There is a need to identify "high-exposure" sites (e.g. contamination from aqueous fire-fighting foam; AFFF).

OW

- State of NY has requested EPA develop enforceable drinking water standards to regulate PFOA and PFOS. Other states have inquired about how to address other PFAS.

Regions

- This class of emerging contaminants is causing widespread public concern in localized areas (e.g., Seacoast cancer cluster in NH).
- **Characterization of health effects associated with chronic consumption of water at PFOA/PFOS levels above the Lifetime Health Advisory of 70 ppt** and interpretation of blood testing results for PFOA and PFOS.

- Complete determination of public health consequences of PFAS.
- **Federal numeric regulatory standards for remediation of soil and water.**
- **Federal regulatory numeric drinking water standards and water quality standards** for protection of water quality and human health.
- States have expressed a need for EPA to promulgate an MCL for PFAS.
- **States have expressed the need for grants to conduct sampling, particularly at small drinking water utilities and private wells,** and for remediation.
- Federal and state collaboration should be included on all new and revised changes to rules, regulations, standards, and advisories.
 - Allow state representation (Environmental Council of the States (ECOS) and/or Association of Clean Water Administrators (ACWA) on federal agencies working group for PFAS.
- Improved federal coordination on new and revised changes to rules, regulations, standards, and advisories relating to human health impacts (i.e. ATSDR, CDC).
- Water systems seek to return to service wells with PFOA to meet water supply demands. There is a need for cost-effective centralized and point-of-use treatment.
- Water systems seek finance options for long term solutions (consolidation, new source, treatment) for emerging contaminants that are not cost eligible under DWSRF.
- Creation of an expert panel on effective remediation treatment technologies
- Funding for states to conduct monitoring and assessments.
- Funding for municipalities to address PFAS contamination in drinking water supplies, Municipal wastewater treatment, and Municipal solid waste landfills.

APPENDIX: SITE-SPECIFIC SUPPORT

Site-Specific Activities

- We are working collaboratively with States of New York and New Jersey to address quite a number of locations where PFAS contamination of groundwater and surface water has impacted public and private drinking water supplies. Locations/sources include manufacturing facilities (e.g., Hoosick Falls and Petersburg, NY, West Deptford and Deepwater, NJ) and military airfields (e.g. Newburgh, NY) (Region 2).
- We have proposed the Hoosick Falls, NY site for listing on the NPL, at NY State request. State is taking lead in response and enforcement actions. Both State and EPA have conducted field investigations and analysis (Region 2).
- We are providing ongoing technical support and advice to local officials who have requested our assistance, e.g. Village of Hoosick Falls, Town of Petersburg, City of Newburgh, NY (Region 2).

Region 1:

- R1 Lab developed capability to run Method 537 for PFOA and PFAS (and 4 other PFCs) in June 2016, and has analyzed numerous samples in support of site investigations in VT and NH as well as a Federal Facility site in R3.
- At the request of the states, the region provided significant assistance to New Hampshire and Vermont to assess drinking water impacts of PFAS contamination. These investigations began as a result of two large, newly discovered sources from separate St Gobain manufacturing facilities in Merrimac, NH and North Bennington, VT. The investigations moved to other potential drinking water systems from other PFAS sources in the two states.
- The region has recently evaluated and/or addressed PFAS contamination at least 26 National Priorities List Sites (both private and federal facility) in all 6 New England states.
- The region developed a GIS mapping tool to help the New England states to identify potential PFAS threats to drinking water systems throughout New England.
- Our Laboratory developed capability to run EPA 537 Rev 1.1 in May 2016 for the 6 PFAS listed in the UCMR and has run over 200 residential drinking water samples for a number of sites in NH and VT
- Assisted EPA Region 3 with residential drinking water analysis for the Naval Air Development Center in Warminster PA.
- Region 1's Laboratory assisted NHDES in problem solving lab data deficiencies, which directly lead to EPA publication of the Technical Advisory - Laboratory Analysis of Drinking Water Samples for Perfluorooctanoic Acid (PFOA) Using EPA Method 537 Rev. 1.1
- Region 1's Laboratory has assisted with on-site demonstrations and training for method development of EPA Method 537 with staff from EPA R3 and State of Massachusetts (MADEP).
- Held a conference with QA representatives from all New England states regarding quality control issues pertaining to PFOS/PFOA, and PFAS.
- NH Childcare study – 20 drinking water samples from childcare centers in NH were samples and analyzed for PFASs (All Non Detects).
- Continue to provide analytical support to state partners, many studies in the planning stages.

The Region 2 lab is

- developing a modified Method 537 for the analysis of 14 PFCs in drinking water including the two with health criteria - PFOA and PFOS.
- working with ORD and the state of NJ to try to develop methodology that would enable identification of PFCs potentially coming from multiple sources in West Deptford, NJ.

Region 3 lab

- developed capability to run Method 537 for PFOA and PFAS (and 4 other PFCs) in January 2017, and has analyzed numerous samples in support of site investigations in PA
- conducted data validation on sample results from multiple sites in Region 3 and developed modified data validation procedures to address blank contamination and sampling issues.
- co-lead Cross-Agency PFAS Multi-Lab Method Validation Study for cross-EPA workgroup on method validation and exposure
- is participating in the Phase I Multi-Lab Validation Study for 24 PFAS compounds
- is co-chair for cross-EPA PFAS Data Quality Workgroup to develop guidelines for data deliverables and assessment criteria to use agency-wide
- is developing contract vehicle (IDIQ contract) to obtain commercial laboratory services for Method 537 to improve consistency and specific data quality requirements.
- enforcement staff in EPA Regions 3 and 5 have also issued a series of SDWA emergency orders to private party DuPont (and later, Chemours) in 2003, 2006, and 2009 for PFOA contamination from its Parkersburg, WV facility.
- The remedy included the temporary provision of an alternate source of drinking water by DuPont and Chemours, which will continue until a permanent alternate drinking water supply is provided. The 2016 amendment requires appropriate action if levels of PFOA in drinking water exceed 0.07 ppb (based on site-specific data, as well as EPA's Lifetime Health Advisory).

Region 4 has

- provided assistance to Georgia Environmental Protection Division with two comprehensive surface water sampling efforts on the Coosa River. Samples were analyzed by Region 4.
- worked with Alabama Department of Emergency Management in an ongoing effort to evaluate soils impacted by PFAS including updating soil screen values for surface exposure to recreational users and residents.
- worked with four states before and after issuance of the HA to monitor the status of each of sixteen community water systems having PFOA or PFOS above the 2016 final health advisory.
- the Superfund Division (SFD) staff participate on a Bi-Weekly PFAS Regional Coordination Call with HQ. SFD staff are also coordinating with DOD on Region 4 Superfund sites with potential PFAS contamination. As a member of the Federal Facilities Forum, Region 4 Superfund Division staff have assisted in drafting a Remedial Project Manager Training course which includes a module to address PFAS/PFOS/PFOA issues, status and examples.
- provided expertise and assistance to ATSDR during two rounds of biomonitoring to evaluate PFAS impacts in north Alabama.
- conducted public meeting in north Alabama related to its work and has assisted ATSDR with two public availability sessions.

Region 5

- Issued a revised Emergency Consent Order to DuPont/Chemours jointly with Region 3 in early 2017. PFOA waste from the DuPont's Washington Works facility contaminated portions of WV and OH. The order requires DuPont to offer treatment, connection to a PWS, or temporary bottled water to people on public or private water systems with PFOA levels above 0.07 ppb. The OEPA has formally requested that USEPA remain the lead on this enforcement effort.
- Discovered PFAS contamination in two municipal water wells at Wright Patterson Air Force Base (Ohio) in the spring of 2016. The wells were taken off-line in December 2016 through partnership

with the OEPA's water program. The Air Force Base has informed consumers as required and plans to install drinking water treatment at the impacted wells eventually. The EPA Superfund program is overseeing a site investigation at Wright-Patterson Air Force Base, a federal Superfund site. The investigation began in November 2016 and EPA expects a site investigation report for the PFAS groundwater contamination in the fall of 2017.

- Is monitoring the status of heavy PFAS contamination at the former Wurtsmith Air Force Base, a proposed Superfund site, in Oscoda, Michigan impacting soil, groundwater, surface water and some area fish and wildlife due to extensive use and improper disposal of aqueous fire-fighting foam. Contaminated groundwater has migrated off the base and contaminated downstream Oscoda private drinking water wells. There is concern that the chemical plumes may reach Lake Huron.
- Provided technical assistance (at the request of Minnesota) after significant PFAS contamination was found in parts of the eastern Twin Cities. From the 1950s to early 1970s, 3M disposed of PFAS manufacturing wastes in various dump sites and landfills resulting in contamination of drinking water wells in seven communities (covering nearly 100 sq. miles), aquatic life, soil, groundwater, area lakes and the Mississippi River.
- Is monitoring the status of public water systems having PFOA or PFOS above the 2016 final health advisory.
- Participate on a Bi-Weekly PFAS Regional Coordination Call with HQ.
- Conducted a study to examining whether PFOS may be in the effluent of decorative chromium electroplating facilities that discharged to WWTPs and whether these releases were widespread. The study was in support of OAQPS's hexavalent chromium MACT standard which was subsequently revised to disallow the use of PFOS-containing fume suppressants.
- Collaborated with ORD, R5 lab and Colorado School of Mines to examine the potential for PFAS uptake and bioaccumulation into crops grown in biosolids-amended soils. Findings from this study were published in two peer-reviewed publications, and provided important information regarding the potential human exposure to PFASs in fresh produce.
- Hosts an EPA-wide PFAS SharePoint site for use as a communication tool to connect those working on various PFAS activities.

Region 8

- Provides technical assistance to the Colorado Department of Public Health and Environment (CDPHE) and local stakeholders in the Security, CO area at monthly partner meetings attended by the public water systems, county, and air force.
- Provided funding to CDPHE in FY16 to assist the county in conducting private well testing for PFCs in the Security, CO area.

Region 9

- Convenes quarterly calls with utilities in the outer Pacific Islands (Guam, Northern Marianas) on operational status and progress on long-term solutions
- Monitors status of utilities during regular management meetings/calls with States that are conducted monthly-quarterly. Some systems have continued to use affected wells by blending sources. Data from the sampling of blended water is provided to States.
- Awarded a \$120.8K grant to Arizona Department of Environmental Quality to conduct statewide assessment of drinking water sources potentially at risk of PFAS contamination.
- Has eight private National Priorities List (NPL) sites where treated remedy water contributes to drinking water that is served to over 1.5 million households. In coordination with the States of California and Arizona, Region 9 is developing sampling plans and outreach strategies to evaluate

whether any of these private NPL sites could be contributing PFASs to the public drinking water supply.

In Region 10,

- the sites of concern identified to date are all Federal Facilities, with the suspected source of contamination identified as military base firefighting training areas. Region 10 is currently providing oversight, and technical assistance as requested, of investigation activities at two Federal Facilities where contamination has migrated off-base and contaminated residential drinking water wells. At both facilities, an alternatives source of drinking water is being provided by the Federal Facility to residents while the nature and extent of contamination is being evaluated. A third base has just recently identified contamination of on-base drinking water wells. The contaminated wells have been taken off-line.

Site-Specific Challenges

- PFAS are widespread in New York and New Jersey due to long-term industrial activity and a high concentration of sites containing PFAS including airports and military bases.
- Communities in Region 3 are creating their own drinking water standards that are lower than the health advisory level. Two communities are using “non-detect” their drinking water standard.
- Region 4 Superfund Division staff need the November version of the Regional Screening Levels (RSL) table to be released as soon as possible with the screening levels for PFOA and PFOS included. SFD staff need EPA approved methods for sampling and analysis, better toxicity information, and better information on treatment technologies with ORD support.
- In Region 8, several unanswered questions remain, including health risks of other PFAS besides PFOA and PFOS, as well as impacts to livestock and vegetables/fruits irrigated with contaminated water.

Site-Specific Stakeholder Concerns

- Arizona Department of Environmental Quality has asked for assistance in developing Quality Assurance procedures for PFAS sampling (Region 9).
- Region 2 has facilitated collaboration between New Jersey Department of Environmental Protection (NJDEP) and ORD to conduct forensic identification of PFAS sources in southwestern NJ. ORD’s support to NJDEP is crucial to proceed with site investigation activities.
- The New York Congressional delegation has written to Administrator Pruitt urging the promulgation of a MCL for PFOA and PFOS and for EPA to finalize the listing of the St. Gobain Performance Plastics Site on the NPL. Elected officials have also contacted EPA about the need to address reported PFOA/PFOS contamination in Newburgh, NY and on Long Island.
- Region 4 Superfund Division staff have been mostly working with DOD on PFAS issues, but any interaction with our States or other stakeholders has indicated they need the same information our staff needs.